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The Transition from Medical Student to Junior Doctor: Today's Experiences of *Tomorrow's Doctors*

(13 words)

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Abstract

Context: Medical education in the UK has recently undergone radical reform. *Tomorrow's Doctors* has prescribed undergraduate curriculum change, while the Foundation Programme has overhauled postgraduate education.

Objectives: This study explores the experiences of junior doctors during their first year of clinical practice in the Foundation Programme (F1). In particular the study sought to gain an understanding of how they were experiencing the transition from student to practising doctor and how well their medical school education had prepared them.

Methods: We carried out a longitudinal qualitative study of F1 doctors based in the Peninsula Foundation School in the UK. Forty-eight semi-structured interviews were conducted and 10 participants kept audio-diaries over a six month period. Interview and audio data were transcribed verbatim and thematically analysed with the aid of a qualitative data computer software package.

Results: The findings showed that, despite recent curriculum reforms, most participants still found the transition to be stressful. Dealing with their newly-gained responsibility, managing uncertainty, working in multi-professional teams, experiencing the sudden death of patients and feeling unsupported were important themes. However the stress of transition was reduced by the level of clinical experience gained in the undergraduate years.

Conclusions: Medical schools need to ensure that students are provided with early exposure to clinical environments, with continuing 'meaningful' contact with patients,

and with increasing opportunities to ‘act up’ to the role of junior doctor even as students. Patient safety guidelines present a major challenge achieving this, although with the correct supervision the two aims are not mutually exclusive. Further support and supervision should be made available to junior doctors in situations where they are dealing with the death of a patient and on surgical placements.

(279 words)

Key Words

Foundation Programme, F1, newly qualified doctors, medical education, and qualitative research.

Introduction

The transition from medical student to junior doctor has long been considered a significant rite of passage [1]. International research confirms that this transition is frequently experienced as very stressful [2-4]. Inadequate preparation during medical school, and poor support and education for newly qualified doctors as they first enter clinical practice, have been identified as factors contributing to this stressful experience of transition [4].

Since the Flexner Report [5] first highlighted the need for change in medical education, reform to medical curricula has been ongoing. During the past two decades in particular, in response to the fast pace of scientific transformation and changing societal expectations and values, some radical reforms in education and training have taken place across the globe [6-9]. In 1993, the UK's General Medical Council first introduced *Tomorrow's Doctors,* which set standards designed to ensure that those graduating from medical school would be better equipped to deal with the demands of modern medicine and further education [10]. Emphasis was placed on the integration of the applied sciences and clinical skills with communication skills and the legal and ethical aspects of medicine. An update of the guidelines in 2003 placed increasing emphasis on learning about the clinical realities faced by new doctors through provision of opportunities for students to shadow junior doctors. A third version of *Tomorrow's Doctors* (2009) is currently under consultation.

With the introduction of the two-year Foundation Programme in 2005, postgraduate medical education has also undergone radical reform. The Foundation Programme "aims to make every clinical experience a relevant, more standardised, better supported, and educationally valuable experience with specific and achievable learning objectives" [11]. As opposed to previous postgraduate curricula which were unstructured, undersupported and focused primarily on teaching medical procedures and techniques.

Unsurprisingly, there is an expectation that students educated through the *Tomorrow's Doctors* curriculum should be better prepared for practice, and with the new educational structure provided by the Foundation Programme, this would result in a smoother transition from undergraduate education to clinical practice. This paper reveals the results of a study designed to explore the experiences of Foundation Year 1 (F1) doctors. F1 doctors reflect on how well they feel their medical school education has prepared them for clinical practice and how well the Foundation Programme supports them in their current roles.

Previous research has been conducted to evaluate particular aspects of the *Tomorrows Doctor's* curriculum, but these studies have largely relied on attitude questionnaires, and fail to elicit a deep understanding of transition [12-18]. In recent years, there have been some qualitative studies using interviews and focus groups, but each of these has been conducted in the context of the previous Pre-registration House Officers' (PRHO) training system which preceded the 2005 Foundation Programme [3, 19-21].

Lempp described how PRHOs found the first six months of work to be very stressful, and this was related to high personal expectations and concern about their competency in emergency situations, as well as ignorance of routine hospital procedures and clinical and administrative workload. Other qualitative studies suggest that those educated under the new *Tomorrow's Doctors* curriculum are better prepared for practice than in previous years, and, in particular, are more adept at dealing with uncertainty, communicating with patients, knowing their limits and asserting their right for support [19, 21].

More recently, a multi-methods longitudinal study commissioned by the General Medical Council examined medical graduates' preparedness for practice in the Foundation programme [22]. Illing et al's study used interviews to compare and contrast the preparedness of new medical graduates from three diverse UK medical schools. Their main conclusion was that undergraduates' preparedness to begin the Foundation Programme was greatly improved by prior experiential, work-based (placement) learning in clinical practice during their undergraduate programme. While our study shares some similarities, in that it is also a qualitative study conducted in 2007, it differs in that we interviewed at different times during the F1 year, and additionally used audio diary method thereby enhancing the longitudinal perspective.

Methods

Participants

The participants were F1 doctors based at five hospital Trusts in Devon and Cornwall in the South West of England. A stratified, purposive sampling strategy was adopted. The sample was stratified by medical school (Peninsula Medical School graduates and

graduates from other medical schools), and by hospital site, to facilitate comparison between the two groups, although this aspect is not reported on in this paper. The characteristics of the sample are presented in Table 1.

[Table 1]

Data Collection

A semi-structured interview and audio-diary approach was used with a schedule designed to investigate the ideas of 'transition' and 'preparedness'. Interviews were conducted three to four months into the F1 year, and again three to four months from the end of the programme. The purpose of the second interview was to gain some purchase on shifting attitudes and patterns of behaviour that otherwise might go unnoticed. The same interview schedule was utilised on both occasions, and interviews were conducted as 'guided conversations' to encourage participants to give their own account and meanings [23].

The interviews were conducted by a team of experienced qualitative researchers. Forty eight interviews with 31 participants were carried out in total across the two rounds, 28 in round one, and 20 following drop-outs in round two. Of the 20 participants who participated in round two, 17 had been interviewed previously. Additionally, ten participants used a digital voice recorder to record audio-diary entries throughout the year. They were asked to record their progress and discuss aspects that were going particularly well or not well, and anything else they felt was relevant.

Data Analysis

Interviews and audio data were transcribed verbatim. Pseudonyms have been used to protect anonymity. A thematic index was developed to which the entire dataset could be coded [24]. Initial categories were devised by the research team, then six individual researchers developed thematic indices according to their own understanding of the emerging content of the data. A final overall indexing system was discussed and agreed by all parties in a collaborative research meeting prior to the first stage of formal analysis. Data were then coded to the individual categories in the thematic framework using NVivo - a computerised indexing system for qualitative data.

Before the results of the analysis were written-up, researchers extended a macro-level assessment of the dataset, confirming recorded findings (and accompanying annotations) against each theme and the overall index. This provided the ultimate stage of the entire analysis, framed within a rigorous approach to collaborative inspection of the data.

Results

The stress of transition

One of the main findings of the study was that transition from medical student to taking on the role of a F1 doctor is often extremely stressful. One participant expressed this dramatically: "... 'there's no greater challenge outside of war time than actually being a junior doctor'…". (Derek, Site 1, Round 1). Many F1s reported how emotionally stressed they felt at times:

> "Well, at the end of the day I survived the experience but it was terrifying, I burst into tears twice […] because I just found it so stressful" (Sinead, Site 3, Round 1)

Their lives are in our hands

Many of the participants found that being responsible for patients' lives while prioritising their tasks extremely challenging:

> "…it's just the whole transition from classroom into work place and being aware that you know people's lives are at stake, you can make the small error but it could […] have really severe consequences. I think when you're working on the wards and you're very tired and doing night shifts [...] it's very difficult to keep a clear head and to prioritise effectively" (Andrea, Site 3, Round 1).

For some, the initial realisation of their responsibility for patients' lives made them anxious about their competence, particularly in terms of prescribing:

> "when you first become a house officer [...] there's this kind of fear of like oh no, I could […] you know, people's lives are in my hands, am I good enough?" (John, Site 4, Round 1).

> "I would say at the beginning having to write out like prescriptions and stuff like that, we weren't really at my medical school taught how to prescribe drugs, so I

found that I was very much constantly going to the BNF to make sure that it was the right dose" (Sinead, Site 2, Round 1)

Dealing with uncertainty

Our study revealed a mixed response to dealing with uncertainty. Uncertainty was encountered in terms of what was expected of them as well as medical uncertainty - their own and others, about diagnosis, and treatment:

"Well what exactly is expected of you as an F1, I'm never certain, am I doing enough […] When you're on-call it's incredibly uncertain…" (Adam, Site 5, Round 1).

" I think I felt quite prepared about the whole uncertainty side of, of being an F1 and I think I'd like to consider that I would always admit when I don't know and just not go into something, say like treating a patient if you're not entirely sure what's going on. So I think I was prepared quite well to, to accept that" (Daniel, Site 1, Round 1).

For some, anxiety around uncertainty decreased over time as they began to understand that managing uncertainty is a normal part of being a doctor:

"And I think it's just natural to be scared at the start and probably it's more worrying if you're not and you're more gung-ho and then you're more likely to be a bit dangerous so I think everyone is quite good in accepting […] it's going

to happen, you're going to be uncertain but you're going to be uncertain for every stage up as you keep going" (Margaret, Site 1, Round 1).

Learning from prior experience

While, in general, the transition from student to junior doctor was still experienced by many as difficult and stressful, learning from prior experience was an important finding to emerge from our study, and the majority of participants greatly valued their prior clinical experience. Indeed, even for those who found at least some aspects of the transition extremely challenging and stressful any prior experience ameliorated this:

"I felt really under prepared for F1 I have to say […] they go on about when you're a doctor you do this and good practice is to do that and the only proper […] 'this is what house officers do' input we had was the shadows we did [...] you do learn so much just from doing the job" (Isobel, Site 5, Round 1).

Placements in the specific settings of future F1 jobs appeared to be beneficial:

"I think it also helped the fact that I had already worked with that team in my medical school training, so I knew the individuals there and that was very helpful and I think it helped relieve a lot of my anxieties about starting work as a doctor" (Andrea, Site 3, Round 1).

Working on nights for the first time and being on-call were very stressful times for all our participants. However, those who had been given or taken the opportunity to do some shadowing on nights found it less so:

> "Yeah, you've got to take the opportunities and do it. But that's hard work […] you have to be there at seven o'clock at night […] and you have to be motivated to do that. But it does make a big difference […] if I hadn't done that […] I would have really struggled" (Barry, Site 3, Round 1).

Acting-up

Acting-up to the role as a F1, and attaining as much responsibility as possible during shadowing and on placements also made the transition a lot easier:

> "In particular I found the week where you had to act up as an F1, go on ward rounds, do all the jobs as … I mean as menial as it seemed at the time, was actually a very good experience and just helped to […] prepare me for […] ward work and what it was like" (Jack, Site 1, Round 1).

Limits of preparedness

Many participants also strongly acknowledged that there are limits to how well any medical education could prepare them for the role of junior doctor and that certain aspects of the work can only be learned by experience in the role:

> "I mean, I don't see how, how you can really prepare for that until you're faced with it really […] it's just something that you […] gain through experience…but it's difficult to teach that to someone at medical school because you can't really create that sort of environment in a […] non-real kind of situation" (Becky, Site 5, Round 1).

Multi-professional teamwork

Some felt their prior experience of working in teams and learning about multi-professional teamwork during medical school had helped to prepare them for the actualities of team work:

> "Yeah definitely, I felt very well prepared for that and I like working alongside the nurses and the physios and so forth and I did a lot of SSUs (Special Study Units) during my five years where I was being, you know basically mentored by people from you know other disciplines and I think that was a very good […] gave me a good insight into how everyone works together" (Andrea, Site 3, Round 1).

> "That's always been something that has been at the fore-front of all of our teaching in that whenever we come up with a scenario and we have to discuss it […] and what would we do next? "Oh, obviously involve the multidisciplinary team". And while that was just something that came out of your mouth at Medical School, [...] I've realised the truth of it while working here" (Patrick, Site 1, Round 2).

Others who had not had as much experience of team work, or had not realised the significance of this during their medical school education reported otherwise:

> "I mean again as an undergraduate you don't really get that much exposure sort of working with physios, working with occupational therapists, all the

specialist nurses as well and as soon as you're thrust into the job then all those people are on the ward around you as well and all those people are spending just as much time with the patient as you are..." (Thomas, Site 1, Round 1).

As the above quote demonstrates the practice of 'doing', as opposed to just observing, is very important.

While communicating with senior members of staff seemed to be an initial source of anxiety this was alleviated where students had prior experiences of working with consultants:

"I think on that level it's definitely been […] we've been well prepared because we've had a lot of interaction with […] from the top in the sense of doing stuff just with consultants which is useful because you […] not only for the teaching level but on the basis that you kind of get used to being in the presence of […] I don't say greatness but in the sense of kind of authority and power and it makes it easier to know how to deal with that" (Paul, Site 1, Round 1)

Working (or not) with others

As we have already shown, many of our participants found the start of the F1 year extremely stressful, but as they gained further experience in actually doing the job, and particularly working with senior doctors as well as in multi-disciplinary teams, this initial anxiety receded. Traditionally, medicine has been a hierarchical profession with senior doctors wielding considerable power over junior doctors; however senior doctors play important roles as mentors and teachers of junior doctors. While some of

our respondents reported experiencing initial anxiety about working with consultants, surgeons and senior doctors, this often lessened after time:

> "I think it always sort of scared me, that part of it, you know, communicating with seniors but since I've been doing it, I feel a lot less intimidated or worried about it now" (Penny, Site 2, Round 1).

Senior doctors were seen to play a crucial role in training and supporting F1s. While our participants reported that they generally felt supported by senior doctors there were examples where this was not the case, and surgeons in particular were often reported as absent:

> "...I've noticed that in surgery, there's not so much support, because […] I think because the surgeons are kind of in theatre, or they're in clinic […] so I did find at my first placement I was kind of on my own" (Bridget, Site 3, Round 1).

While Bridget considers the lack of support from surgeons as a problem, she also saw this as an opportunity to learn and gain support from others in the team:

> "...but I think it probably benefited me in a way [...] if you're put in that position where you're on your own, you learn how much you can ask nurses about and how much you can ask other MD team members about, and then how much you need to reserve and ask a consultant about…" (Bridget, Site 3, Round 1).

Levels of support in some environments were much better. Experiences of working in Accident and Emergency were usually positive in terms of support:

> "Yeah in A&E I felt really supported […] I think everyone was aware that we were F1s and that we weren't necessarily expected to know everything, and then there was just a very open attitude of us asking for help and teaching us And although sometimes you feel like you're in the deep end, we were never really put anywhere that we should have been out of our depth or couldn't ask for help if we felt we were I guess" (Sheila, Site 3, Round 1).

> "I definitely think in A&E I do feel very much supported. With the resus situations […] like they do try to get us to come in and get us to do bits […] so that we're getting more comfortable with that type of thing... (Sinead, Site 2, Round 1).

<u>The dying hours</u>

While the F1 programme has been introduced to ensure that junior doctors are educated and given support to fulfil their roles, our study reveals that support for F1s when a death occurred, or a patient was dying, was often lacking:

> "...I was present helping, trying to resuscitate her, and she did come back, but she died shortly afterwards, and then I had to […] phone the Coroner and explain the situation and basically say I wasn't prepared to do the death certificate. And I actually found that I had a lack of support, and sadly in that

> situation is that I was really quite uncertain what to say to the Coroner [...] I really didn't know quite where to start [...] But the day she died I felt very, very sad afterwards, and I felt that I needed a bit of space from it all, which I couldn't take… (Andrea, Site 3, Round 2).

The following interview highlights not only the lack of support and the difficult emotions that death and dying raised, but it also suggests that the medical school experience had not prepared him well for dealing with such situations:

> "A 70 year old woman who'd had an MI and it was so undignified, and then we all put the needles in to try and get access and try and get a blood gas and it was, and she died and it was just, just ghastly. I must admit after that I really didn't cope that well that evening and the rest of the week, it was, it really affected me and I did feel a bit 'what am I doing here?'. I didn't feel prepared and yet speaking to others, they all kind of feel the same".
>
> (Paul, Site 1, Audiodiary).

Discussion

Despite the radical changes introduced to undergraduate and postgraduate medical curricula in recent years, the transition from medical school to practice is still very stressful. Anxieties were expressed about being responsible for people's lives, and this newly-gained sense of responsibility often made participants anxious about their competence, particularly in terms of prescribing.

Another source of stress for some related to dealing with uncertainty - for example not knowing what was expected of them as a F1 doctor and not always knowing when to seek help and what help to seek. However, for others, dealing with uncertainty was something they had expected, and it was appropriate and safer to ask questions or call for help rather than to carry on regardless. The *Consensus Statement on the Role of the Doctor* says that doctors alone amongst healthcare professionals must be capable of regularly taking ultimate responsibility for difficult decisions in situations of clinical complexity and uncertainty [25].

Many of our participants reported that learning from prior clinical experience in placements, electives, and shadowing helped to ease the transition and better prepared them for the role of F1 doctor. This finding confirms that of Illing et al [22]. Acting-up as much as possible to the F1 role, attaining as much responsibility as possible during shadowing and on placements, also supported the transition.

The implication of these findings is that while observing and shadowing does help, there is no substitute for the accumulation of hands-on clinical experience. Medical school curricula should strive to provide cumulative, meaningful exposure to clinical environments in the undergraduate curriculum, culminating in the student acting-up as an F1 in their final year. However, such work-based learning should be planned, structured, scaffolded, and offer appropriate support and challenge through feedback and integration [17, 26]. This also requires that medical educators, particularly those who are clinically based, gain familiarity with evidence gained from educational research in work-based learning to inform their teaching. Efforts are being made on a policy level to incorporate such practices into all undergraduate curricula through the consultation

draft document for a new version of *Tomorrows Doctors* where “early and continuing contact with patients” is mandatory for medical students [17, 26].

While early and continuing contact with patients is an important issue, the challenge will be for students to have ‘meaningful contact’ with (rather than, simply, *exposure to*) patients. Current models of placement usually restrict both the frequency and intensity of contact that students have with patients. This may be addressed by students following a panel of patients over an extended period of time. Where the patient is becomes the point for an educational opportunity, and students get to know ‘their’ patients lives in detail. ‘Meaningful’ contact has also become increasingly compromised through safety concerns in recent years, so much so that clinical and communication skills are now learned mainly in simulated settings with actor patients, presenting challenges for the transfer of learning [27].

Tomorrow’s Doctors emphasises the importance of working as a team in a multi-professional environment [10, 15] and how medical schools should explore and, where appropriate, provide opportunities for students to work and learn with, from and about other health and social care professionals, deepening multi-professional activity to an inter-professional experience. In our study, such experiences varied greatly in terms of teamworking and levels of support provided. Again, the key factor was the practice of meaningful ‘doing’, as opposed to just observing. And while, historically, teamworking has typically been learned on the job, prior experiential learning can enhance students’ practical knowing of multi-professional teamworking [28].

The Foundation Programme should provide a better supported educational environment than the old system[11]. While current research has shown that, on the whole, trainees felt supported, there were examples where this was not the case. This was especially the case in surgical wards, where supervising surgeons tended to be absent due to theatre responsibilities; and at night, when fewer senior staff were available.

The difficult experience of dealing with death and dying was another major theme to emerge from our study. Many reported distress, and even trauma, in experiencing the death of a patient. In the past, studies have shown that while medical students had some contact with dying patients by the end of their course, many were still anxious, did not feel they had been given enough time to address the issues, and overall felt inadequately prepared [29]. *Tomorrow's Doctors* identifies palliative care as one of the core content areas for undergraduate medical education. However, although palliative care has been successfully addressed within the current curriculum, emergency/acute death and dying scenarios may have been overlooked [30]. Furthermore, our findings here suggest that more support could be given to F1s who are often experiencing the most difficult situations alone, and for the first time.

Conclusions

The transition from medical school to practising doctor will always remain a stressful and uncertain time period, but something can be done about the levels of stress and the quality of transition experienced by new doctors. This transition is a very important

first step in the early career of a junior doctor and, indeed, a healthy level of stress displays an appropriate response to this complex role. However it is important that medical school curricula provide students with the necessary skills and experience to deal with the challenges of being an F1 doctor and thus eliminate *unnecessary* stress relating to lack of preparedness, ultimately for the benefit of patients.

We suggest that early, meaningful, sustained and carefully structured patient contact in an undergraduate education, with the associated opportunity for reflection and integration of learning, will support better transition to real work as a doctor. However, this has resource implications for widespread staff development of a clinical teaching workforce, in understanding how to best apply insights gained from work-based educational inquiry and research.

(4,257 words)

Table 1: Sample Characteristics

Participant #	Male/Female	Hospital Site	Interviewed in Round 1	Interviewed in Round 2	Audio-diary
1	Female	Site 4	☑	☑	
2	Male	Site 4	☑	☑	
3	Female	Site 4	☑	☑	
4	Male	Site 4	☑	☑	
5	Male	Site 3	☑	☑	☑
6	Female	Site 3	☑	☑	

7	Male	Site 3	☑	☑	☑
8	Female	Site 3	☑		
9	Male	Site 3		☑	
10	Female	Site 3	☑	☑	☑
11	Male	Site 3	☑		
12	Female	Site 3	☑		
13	Female	Site 3	☑	☑	
14	Male	Site 2	☑	☑	☑
15	Female	Site 2			
16	Male	Site 2		☑	☑
17	Male	Site 2		☑	
18	Female	Site 2	☑		
19	Female	Site 2	☑		
20	Male	Site 1	☑	☑	
21	Female	Site 1	☑		
22	Male	Site 1	☑	☑	☑
23	Male	Site 1	☑	☑	
24	Male	Site 1	☑	☑	☑
25	Male	Site 1	☑		
26	Male	Site 1	☑	☑	☑
27	Male	Site 5	☑	☑	
28	Female	Site 5	☑		
29	Female	Site 5	☑		
30	Female	Site 5	☑		
31	Female	Site 5	☑		☑
32	Male	Site 5	☑	☑	☑
Total	**17 Male 15 Female**	**Site 1 – 7 Site 2 – 6 Site 3 – 9 Site 4 – 4 Site 5 – 6**	**28**	**20**	**10**

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